



## Superintendent's Quarterly Report *April - June, 2004*

# Fire Ecology and Preparedness

The use of fire as a resource management tool is complex and frequently misunderstood. For those of us in Southern California, especially following the fire activity during the fall of 2003, the concept of fire use for resource benefit is not currently a top priority.

At Joshua Tree, our fire management program can be described as one of total suppression. Until such time as our Fire Management Plan is written, with public scoping and an analysis of the public and environmental aspects of managing fires, fire fighter safety and full fire suppression will continue to be our emphasis.

There have been several positive actions in the past three months that result in us being able to report to you that the park is indeed fire ready. With the transfer of our Fire Management Officer (FMO) to the Bureau of Land Management (BLM) last fall we were informed that the National Fire Management Leadership Board had decided not to fund the position. It was recommended that the FMO for Mojave Park and Preserve also serve as JOTR's FMO. Fortunately, through the hard work of Chief Ranger Judy Bartzatt, Regional FMO Sue Husari and staff at the National Interagency Fire Center, this decision has been amended. The park has funding and will staff an assistant FMO at Black Rock Interagency Fire Station for the fire season. It appears likely that funding from the NPS as well as BLM may be made available for this position on a full time basis for 2005 and beyond. Additionally, monies have been made available to staff several seasonal fire fighter positions that appeared would remain vacant. Therefore, both engines at Black Rock will be fully operational for the fire season.

We are also pleased to report that the BLM and NPS engine crews stationed at Black

Rock performed in a superior manner during a National Readiness Review Team exercise in early June. These fire fighters received special commendations for their performance at the close-out session, for their demonstrated skills in tactics, attention to fire fighter safety and their superior communications amongst and between engines while conducting a 2 hour simulated attack on a wildfire.

Even with this high level of preparedness, wildfires continue to be a major concern. Not only are park ecosystems being damaged but human communities adjacent to park boundaries are placed at risk. Historically wildfires in the park have been small. The typical scenario was for lightning to strike a single Joshua Tree or a pinyon. The resulting fire would burn the tree and the vegetation in the near vicinity for a few feet around, then continue to smolder once most of the fuel was burned. NPS policy has been to suppress wildfire, so rangers and fire personnel would go to the fire and put it completely out. On rare occasions high winds during a fire would cause it to spread over a larger area particularly in the blackbrush vegetation type. Fire records show that between 1942 and 1975, of the 91 wildfires, 84 were less than 0.1 acre, two were less than 10 acres, three were less than 100 acres and the two largest were about



Dry years with thin and spotty fuels

120 acres in size. Beginning in the late 1970s

larger wildfires began to occur with greater frequency. The Joshua fire of 1978 was over 6000 acres. In the 1990s large fire frequency and size continued to increase with the 5000 acre Covington fire in 1995 and the 15000 acre Juniper fire complex in 1999. Large wildfires are extremely difficult to control and usually human efforts at suppression are at the whim of the weather. Control is often only possible after winds die down and humidity increases.

Studies in the 1990s showed that a change



Wet years with exotic grass ground cover

in desert vegetation and fire fuel was occurring. Exotic annual grasses such as *Bromus rubens* and *Schismus spp.* were invading the park and spreading throughout the landscape. During dry years before these invasions, the spaces in between trees and shrubs were nearly devoid of annual native plants. During wet years, the spaces were filled with a thin cover of native wildflowers and grasses that had a low potential for carrying fire. After the exotic grass invasions during wet years, thick stands of exotics grew in the spaces in competition with the natives. In this situation it was found that wildfire starts would quickly be carried out into the landscape by the highly flammable exotics creating large fires. Where previously a wildfire would only consume a small acreage and a single Joshua or pinyon, the more recent fires fueled

## National Parks

*"There is nothing so American as our national parks.... The fundamental idea behind the parks...is that the country belongs to the people...."*

President Franklin D. Roosevelt

### Fire Ecology (cont.)

by exotic grasses destroy large acreages and numbers of Joshua Trees, pinyons and blackbrush.

It appears from late 990s research that three major park plant communities, all in the higher elevations, are in the wild fire zone and are susceptible to fire. These are the Joshua Tree, blackbrush and pinyon communities. The research indicates that Joshua Tree and blackbrush communities are fire sensitive and, if a rare burning event (possibly once every 1000 years) occurs, the plants take centuries to regrow, if ever. It may be that the blackbrush, a relic species from the ice age, may not grow back at all after a fire. Pinyon communities, on the other hand, appear to have a fire cycle of burning and regrowth of about 200-400 years.

The presence of exotic annual grasses in the park has changed the fire regimes (fire frequency, size) of these park plant communities. Joshua Tree and blackbrush communities are being burned out at an extremely high rate. For example, in the Quail Mountain watershed of the park (the largest and most fire prone of those communities affected), since 1967, 19 percent of the Joshua Trees and 26 percent of the blackbrush have burned. At these rates the Joshua Trees will be burned out in about 130 years and the blackbrush in approximately 90 years. Whether or not they will regrow is unknown. Furthermore, 53 percent of the pinyon has burned. At that current rate, the pinyon community will be burned out in roughly 30 years. Although pinyon is a fire-adapted species, a fire interval of 60 years is not the same as a 400-year interval.

It follows that animal and other plant species associated with these communities are also being severely affected. Further studies are needed to determine the extent of impact on these species.

### Superintendent

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The second quarter of calendar year 2004 passed by in a flash. With the remnants of an outstanding flower season waning, the superintendent's office pursued a host of activities. These included co-hosting a two-day Sacred Lands Conference in 29 Palms attended by 55 people from various Native American tribes, government agencies and interested citizens. The focus of the conference was communication between tribes and government agencies, how sacred lands are quantified and methods by which they may be managed.

The California Desert Protection Act of 1994 established the Joshua Tree National Park Advisory Commission. Its purpose was to advise the Secretary of the Interior concerning the development and implementation of a revised comprehensive management plan for Joshua Tree National Park (JOTR). This commission was instrumental in developing our backcountry and wilderness management plan, as well as advising the superintendent on a host of management issues. The commission has not been active for the past three years because of a lack of a quorum, and the charter terminates October 31, 2004. We officially decommissioned the commission in June.

We initiated a program to bring in federal employees from the Executive Potential Program for 60 day details. These details, which cost the park a minimal amount, provide staffing from some of the most promising mid-level management personnel in all agencies of the federal government. Through the efforts of Sande McDermott, Alaska regional Cultural Specialist detailed to JOTR for 60 days as acting assistant superintendent, coordination is back on track for a Learning Center. Learning Centers are part of a national program funded through the Service's Natural Resource Initiative. In conjunction with Copper Mountain College, we are pursuing federal funding for staff (potentially located at the College) which would seek and coordinate research concerned with the California Desert, and provide this information for educational purposes.

We have begun the initial planning to establish a Friends Group for Joshua Tree National Park. Its primary purpose would be to improve the park's capacity to create, nurture, and expand partnerships that enhance our ability to fulfill our mission.

I had the opportunity to actually get out in the park for two days on the southern boundary. An assessment of existing access and level of unauthorized incursions along the boundary indicates that the park is being used from the south along authorized roads and routes, while the level of unauthorized use has decreased from previous years (three years ago). Several areas have been posted and vertical mulching appears to be deterring illegal recreational activity.

I trust you will find the information about other activities from this past quarter interesting. As always, if you have questions or ideas about the park, please call or write.

## Administration

Funded jointly at a cost of approximately \$10,500 by the Pacific West Region and the park, JOTR now has a TEL Station, comprised of a satellite dish, receiver and TV monitor. This gives park staff a method of remote learning for a select number of courses, some of which are interactive with the instructor at a distant location, reports Division Chief Monica Rapp. Also identified by other names, some of which are Distance Learning Center, Technology Enhanced Learning and TELNET site, the TEL Station is located in the cultural resources building. The park looks forward to not only offering more employees valuable and at times mandatory training but at an appreciable cost savings.



TEL Station satellite dish

JOTR is in the process of upgrading its computers to XP and the Active Directory system. The estimated annual license costs for each machine is approximately \$400.

Two employees (one Administration and one Resource Management) attended the Stephen Mather Training Center for Fundamentals V, May 3-7, in Harpers Ferry, WV. This completed the last leg of NPS Fundamentals training that began with Fundamentals I and II at the Albright Training Center at Grand Canyon in June of 2003. While the earlier Fundamentals training encompassed the National Park Service's system of operation, in Fundamentals III, IV & V the focus was on why we are here and how we can work together to encourage others to support the mission to preserve it for future generations.

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## Resources Management

Luke Sabala, Physical Sciences Branch, reports that managing the park's approximately 300 abandoned mines present a unique challenge as visitor safety, cultural and historical significance, and needs for wildlife habitat all compete for attention and funding. Although park rules prohibit people from entering mines, increases in park usage combined with the lure to explore have increased incidents of intrusion by visitors. However, all mines cannot simply be sealed, as bats commonly make abandoned mines their homes. This quarter, Physical Sciences installed one bat gate and two cupolas at the 1930s Golden Bell Mine. The cost of this project was approximately \$11,000. The Golden Bell is currently home to a small population of California leaf-nose bats.

This quarter, a stabilization crew from Tumacacori National Historic Park completed two structural stabilization projects (three structures at the Eagle Cliff Mine and masonry work at the Pinto Wye Arrastra), according to cultural resources manager Jan Sabala. An archeological survey of social trails north of Barker Dam is completed and the report being written. In addition, the field work for an archeological test excavation project was

completed in June by a crew from the Western Archeological and Conservation Center, with the assistance of park archeological staff. Also, a team of NPS curators, who visited the park in May, is developing a new Museum Management Plan. This plan will provide park museum management guidance for the next five to ten years. It is expected that this document will be published and available for distribution in the fall.

Tasha LaDoux, park botanist, reports that this spring was a busy season for the vegetation branch. With the help of botanist Glen Clifton, she visited the Wonderland of Rocks for botanical surveys and they added over 20 species to our *Park Inventory of Plant Species* in just 2 days! This is remarkable considering the size of the park and the number of acres that have never been visited. Even more remarkable is the finding of a new rare species for the park, the Alkali Mariposa Lily (*Calochortus striatus*). This finding represents a significant southern range extension for the species. This plant occurs in very limited populations in only four California counties and must be legally considered as an endangered species according to the California Native Plant Society. Efforts to find two other rare species, a daisy (*Erigeron parishii*) and a milk vetch (*Astragalus tricarinatus*), purported to occur in the park, were not successful.

"Team Soil Crust" visited one hundred sites in the Wonderland of Rocks area, and laboratory testing has begun in order to assess the soil characteristics. In addition, the nitrogen-deposition project being conducted by Edie Allen (UC Riverside) and Andrzej Bytnerowicz (USFS) has continued to progress through its final season. Margaret Adam, JOTR biological technician, has coordinated with the researchers to facilitate collection and monitoring of the air quality samplers.

Restoration and nursery projects have also con-



"Team Soil Crust"

tinued to make progress. Over 800 plants were transplanted along the main route in the park as the Federal Highways Road Project finished. Large strides have been made in restoring some of the park's "closed roads", most of which occur within wilderness boundaries. Fourteen of these roads were hand-restored over the last few months. Many thanks to Jean Graham, nursery manager, and her crew for the multitude of cuttings needed for all these projects.

## Maintenance

Progress continues on the Visitor Protection Office with all interior walls placed and the electrical, HVAC, water, gas and IT lines in place. Insulation is completed and dry walling has commenced, reports Maintenance Chief Harry Carpenter.

The trail crew assisted Devil's Postpile National Monument in their annual spring trail opening.



All park campgrounds were operational on a seven-day service schedule the entire quarter.

Federal Highways closed FLHP Project 291 and 294 contracts for a total of 10.9 miles of new road construction along park route 12.

The Youth Conservation Corps program started on June 21 and employs 15 local youths for a nine-week period. This year's projects include work on Forty-nine Palms Canyon Trail and partnership projects at Great Basin and Channel Islands

Chief of Interpretation Joe Zarki reported a busy spring season for both the visitor center staff and the education department. Cindy von Halle reported that over 25,000 visitors received information at the Oasis and Cottonwood Visitor Centers in just the month of April. The interpretive staff presented a variety of day and evening programs as well as conducting additional programs for groups both in and out of the park.

The education department, under the direction of Lorna Lange-Daggs, presented 175 school programs during the last quarter to 5230 students as well as conducting teacher workshops.

Grant-writing efforts continue as staff search for ways to increase public and education offerings. One proposal deals with converting curriculum guides to PDF and CD-Rom format. Another grant would allow for the creation of a secondary level program on radio telemetry and how it is used as a tool in scientific study. Staff recently assisted the Desert Managers Group on a grant proposal for a desert-wide tortoise education plan.

The summer edition of the *Joshua Tree Guide*, distributed Memorial Day weekend, encourages readers to celebrate the 40<sup>th</sup> anniversary of the Wilderness Act.

An interpretive panel for the Oasis Visitor Center was researched and drafted featuring Minerva Hoyt's role in the conservation of the Mojave Desert landscape and the establishment of Joshua Tree National Park. The park wayside exhibit at the Palm Springs airport was refurbished and preliminary screening was started on wayside exhibits for the Pinto Basin.

## A Partnership in Art

A long rich relationship exists between artists and our public lands. In the 19<sup>th</sup> century, artist George Catlin set the stage for the creation of Public lands when he argued for lands to be set aside solely for the enjoyment of the public. Nearly forty years later, artists Thomas Moran accompanied the Hayden Expedition as they explored the Yellowstone Territory. The resulting paintings inspired the public and congress to lobby and ultimately create the world's first national park.

Joshua Tree National Park and Park Stewardship through the Arts (PASTA) have created a partnership intended to further stewardship through the arts. An Artist-in-Residence program, soon to begin its tenth year, has produced artwork which has been exhibited in museums and galleries throughout the United States. The Palm Springs Desert Museum and the California Museum of Photography have already exhibited work, and, beginning this October, the Riverside Museum of Art will exhibit work produced through the program on a regularly scheduled basis.

Additional programs include an annual Twenty-four Hours Photographing Joshua Tree National Park. The California Museum of Photography has featured this event and in the spring of 2005 the Riverside Museum of Art will begin participating.

This partnership is a dynamic one with further growth and vision driving sustaining and future programs. Public awareness and stewardship are the ultimate goals. To learn more, visit our website at [www.artmojave.org](http://www.artmojave.org).

Tim Terrell, Founder and Director

## Hank McCutchen Retires

Dr. Hank McCutchen, Chief of Resources Management, has retired after a 45-year career, including 41 years of service with the Federal Government. Although he has had a wide variety of jobs including working as an interpreter at Prince William Forest in Virginia, as a seasonal fire control aid at the Grand Canyon and as a smoke jumper in Montana, his main interest has been in wildlife research and management.

His impressive resume includes working with the Craighead brothers on grizzly bear research in Yellowstone and managing the reestablishment of desert bighorn sheep in Zion National Park. He has also admirably served the Park Service in positions at the Denver Regional Office, in Rocky Mountain National Park as a wildlife biologist, and at CESUs (Cooperative Ecosystem Studies Units) at Fort Collins, CO and Flagstaff, AZ.

Joshua Tree has certainly benefited from his experience and expertise during his 7-year tenure here. We hope he and his wife Marilyn will remember fondly their time in the Mojave Desert and we wish them many years of health and happiness.

## Interpretation